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NICOLET EXPLORER OSCILLOSCOPE

QUICK FIX GUIDE

NO DISPLAY - 1

NO DISPLAY - 2

NO DISPLAY - 3

DISPLAY ADJUSTMENTS

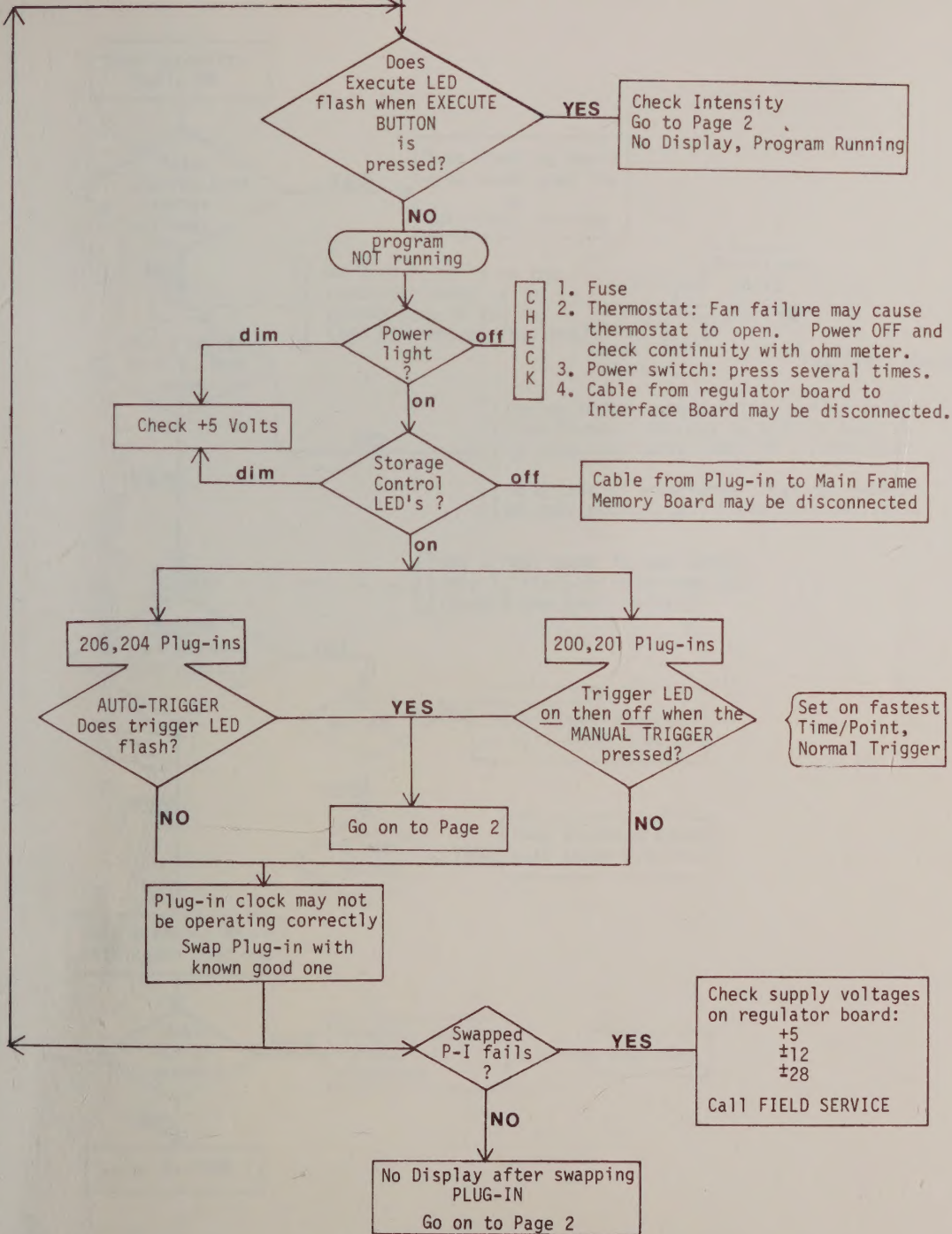
POINTS FLYING OUT

DIGITIZER ALIGNMENT - 1

DIGITIZER ALIGNMENT - 2

OTHER PROBLEMS

MAIN FRAME VOLTAGE CHECK



NO DISPLAY - 1

NO DISPLAY - 2

NO DISPLAY - 3

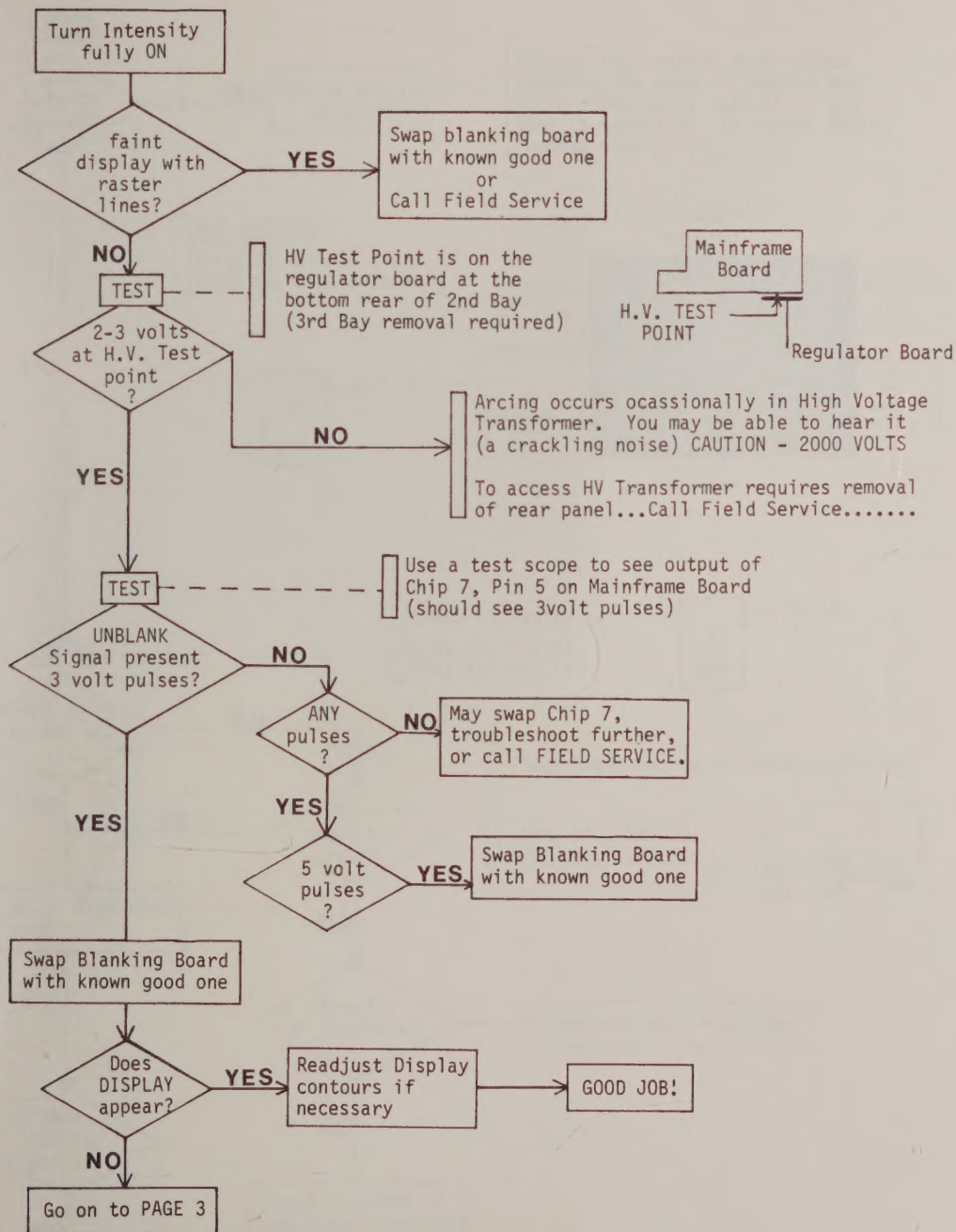
DISPLAY ADJUSTMENTS

POINTS FLYING OUT

DIGITIZER ALIGNMENT - 1

DIGITIZER ALIGNMENT - 2

OTHER PROBLEMS



NO DISPLAY - 2

NO DISPLAY - 3

DISPLAY ADJUSTMENTS

POINTS FLYING OUT

DIGITIZER ALIGNMENT - 1

DIGITIZER ALIGNMENT - 2

OTHER PROBLEMS

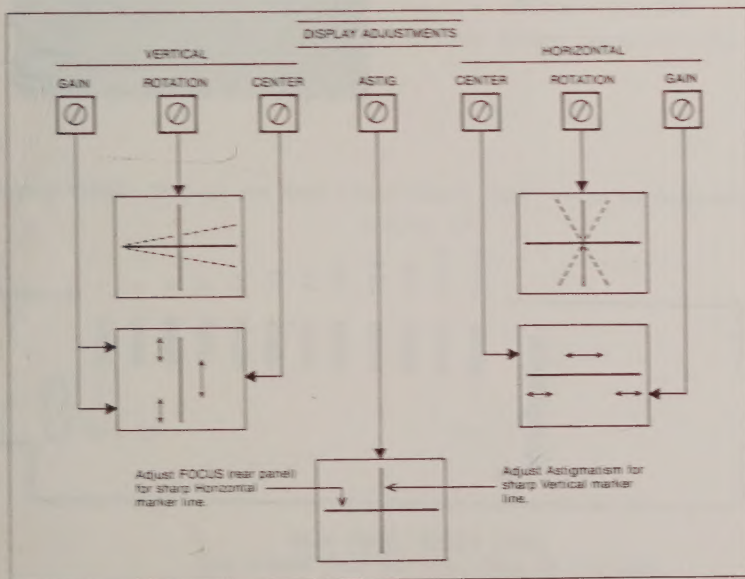
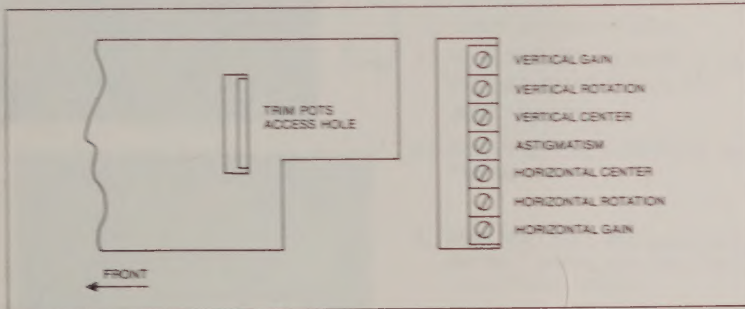


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DISPLAY ADJUSTMENTS

1. Place scope on its side, Plug-in up.
2. Remove bottom skin. Locate 7 trim pots on blanking board.
3. SET UP: With no input signal, adjust DC levels so that one channel is at top of screen, one at the bottom.
4. Adjust trim pots as necessary using the diagrams below.



DISPLAY ADJUSTMENTS

POINTS FLYING OUT
 DIGITIZER ALIGNMENT - 1
 DIGITIZER ALIGNMENT - 2

OTHER PROBLEMS

POINTS FLYING OUT

Are the problem points moving through display

?

YES

Swap Plug-in

NO

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FOR IDENTIFYING BAD BIT:

1. Set scope on any X2 multiplier range.
2. Expand to see points flying out.
3. Catch points in HOLD.
4. Move VERTICAL CURSOR to point next to point flying out.
RESET NUMERICS.

5. Move VERTICAL CURSOR to the point flying out.

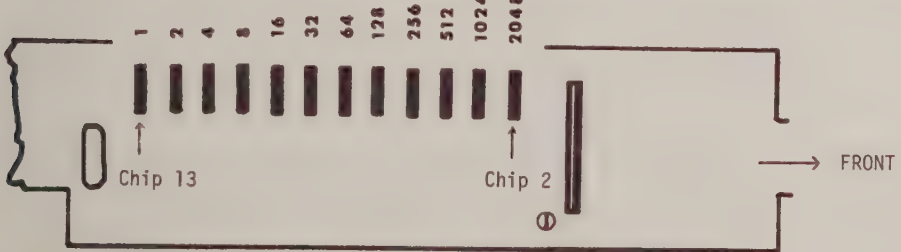
6. READ VOLTAGE, disregarding the decimal point and the least significant digit.

eg.: 00.160 = Bit 16

02.560 = Bit 256

This number represents the bad bit.

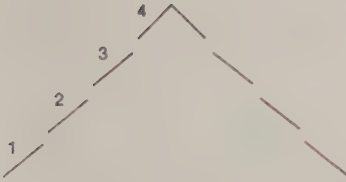
7. Locate MEMORY CHIP on the Main Frame memory board which corresponds to the bad bit.
REPLACE IT.



MAIN FRAME MEMORY BOARD
(As viewed from the top, Plug-In removed)

DIGITIZER ALIGNMENT PROBLEMS

200, 201, 204-2, and 206



Gain Problem - Separation



Offset Problem - Glitches

Digitizer alignment problems may be corrected by fine tuning the appropriate gain and offset pots on the Digitizer Boards (ADC's) for the 200, 201 and 206.

The 204A has no adjustment, because it is digitized through the TRW chip.

Experimentation with a demo unit is advised before attempting to align the digitizers in the field.

SET-UP: You will need a signal generator and an alignment tool or very small screwdriver.

1. Power off
2. Remove Plug-in for easy access. You do not need to replug the 6-pin connector. Re-connect the ribbon connector. Power on.
3. To access trim pots on Channel B (206 Plug-in), removal of Channel A is necessary.

For the 200 and 201 Plug-ins, the Channel B trim pots may be reached without removing Channel A, but you may have to bend the boards a bit.

PROCEDURE: 1. Apply triangular waveform signal to the (+) input BNC.

Adjust for 3/4 full screen display.

Adjust frequency for a one period waveform display.

2. Observe the displayed waveform for any discontinuities. (See alignment table on following page to determine which of the gain or offset pots require adjustment.)

IMPORTANT NOTE: You may temporarily misalign a trim pot in order to determine whether it is the pot corresponding to the glitch or separation on the screen.

ADC ALIGNMENT TABLE

SEGMENTS	STAGE	TRIMPOT
GAIN ALIGNMENTS		
4	1	R2
16	2	R3
64	3	R5
256	4	R7
1024	5	R9
OFFSET ALIGNMENTS		
4	1	R1
16	2	R4
64	3	R6
256	4	R8
1024	5	R10

1. Observe for discontinuities
2. Vertical Expansion X32
3. Autocenter ON
Use V.cursor to center waveform
4. DC LEVEL: Slowly adjust from fully negative to positive. Observe alignment discontinuities and adjust appropriate trim pots.
5. Check entire DC range to assure that no new glitches or separations exist.



200

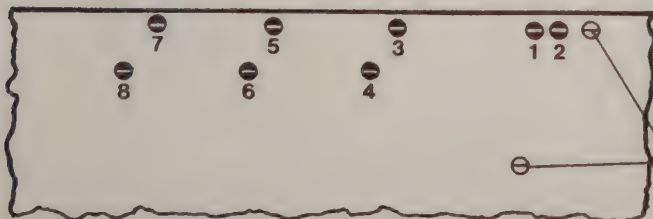


201

(± 25v.- DO NOT TOUCH!)



206



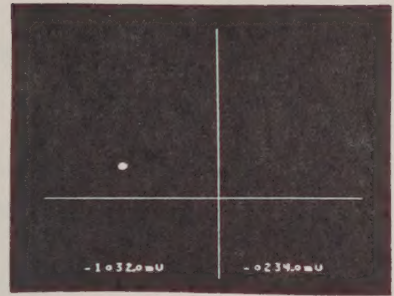
204-2

BALANCE pots: Do NOT adjust
(The balance pot may be in
either location, or absent.)

OTHER PROBLEMS

Dot and Cursors only on screen:

X-Y with no input signals - Turn to Y-T.



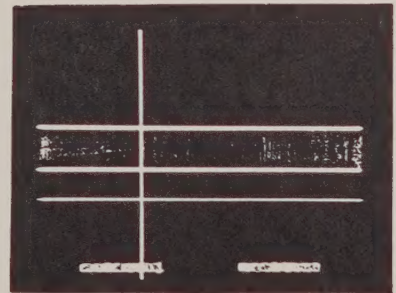
Dot ONLY on screen:

Program not running, H.V. is okay
Swap Plug-In.



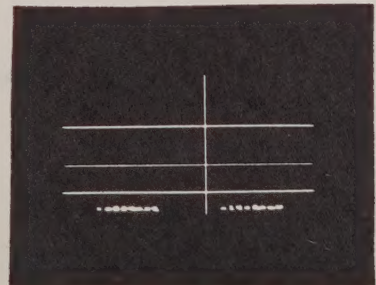
Matrix appears behind numbers:
Intensified area between 2 input signals:

1. Intensity is too high.
2. Blanking Board failure
Change Blanking Board or FET and
optoisolator on Blanking Board.

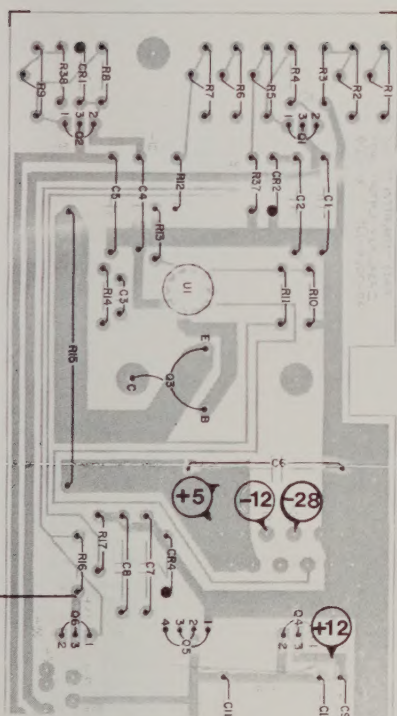


Display contracting, disappearing, re-appearing:

Anode to the CRT is disconnected.
Power OFF, wait, and re-connect button
connector (anode) on right side of CRT.



VOLTAGE CHECK - MAIN FRAME on regulator board



1. Remove bottom skin
2. Attach GND lead of meter to copper bar or frame.
3. Measure the following voltages:
 - + 5 volts: should be set so that the voltage on the digitizer board is between 4.8 and 5 volts (May be checked on digitizer boards at mother board connector).
 - $\pm$ 12 volts (see sketch)
 - $\pm$ 28 volts (see sketch)

Adjustments:

Pots are on Plug-In side of Regulator Board:

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-12 +5 +28 -28 +12 +170

Note: Other voltages on the regulator board are not regulated voltages.
They may vary quite a bit from the values printed on the regulator board.

